

DOCKET NO. VERTE.076A**PATENT**

Serial No. 10/059,682

Response to Office Action of October 14, 2004

Remarks

Claims 1-2, 4-6, 8-20 and 25 are in the case. Claims 3 and 7 are cancelled. Claim 25 is new.

Claim Rejections Over U.S. Patent 6,679,272

In paragraph 9 of the Office Action, claims 1-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,679,272 (hereinafter the "'272 Patent"). This rejection is improper and it is requested that this rejection be withdrawn in view of the mandates of 35 U.S.C. § 103(c)(1).

Applicant notes that the publication date of the '272 Patent is February 6, 2003. The filing date of the '272 Patent is August 3, 2001. The filing date of the present application January 29, 2002 (i.e., prior to the publication date of the '272 Patent but later than the filing date of the '272 Patent) . Therefore, the '272 Patent qualifies as prior art only under 35 U.S.C. § 102(e).

Because both the subject matter of the '272 patent and the claimed invention of the present application were, at the time the claimed invention was made, owned by the same person, Verteq, Inc., the '272 Patent can not preclude patentability under 35 U.S.C. § 103. *See* 35 U.S.C. § 103(c)(1). A review of the file histories of the present application and the '272 Patent fully and unequivocally support the assertion of common ownership. Therefore, it is respectfully requested that the rejections of claims 1-20 in paragraph 9 of the Office Action be withdrawn.

As a result of the rejection of claims 1-20 over the '272 Patent being overcome, the only rejections remaining in the case are for claims 1-6, 14, and 20. Thus, no pending rejection remains for claims 8-13 and 15-19. It is requested that these claims be found allowable.

Claim Rejections Over U.S. Patent Application Publication 2002/0153806

In paragraph 8 of the Office Action, claims 1-6, 14, and 20 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication 2002/0153806 (hereinafter

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"Beck"). Beck is cited as disclosing "a megasonic transducer with a transducer (crystal 34; Figure 3) and a transmitter (14; Figure 3) . . . [wherein] [t]he transmitter is adapted to be positioned closely above a substrate, as shown in Figures 6 and 7."

The Office Action further notes that several metal layers (72, 74, etc; Figure 3) are located between the transmitter and the transducer in order to couple the transmitter to the transducer. The Office Action notes that Beck does not explicitly that the transmitter is coupled to the transducer in a manner to "attenuate the energy transmitted to a lowermost portion of the transmitter . . . while portions adjacent the lowermost portion are not so attenuated (claim 1) or to attenuate the energy transmitted to a portion of the transmitter (claim 14) or to reduce a ratio of normal-incident waves to the shallow-angle waves (claims 20)." However, the Office Action takes the position that, "given the configuration and arrangement of the Beck device, absent evidence to the contrary, the metal layers between the crystal and the resonator inherently attenuate the energy transmitted to the lowermost portion of the resonator and inherently change the ratio recited in claim 20 because any interference at which transmissive properties change inherently attenuates energy being transmitted transmitted through the interface."

The Examiner further notes the rejections over Beck are largely due to the broad functional language recited in the claims to distinguish the prior art. In paragraph 10 of the Office Action, the Examiner suggested adding a certain positive recitation of an element, rather than function, be added to the claims to distinguish the prior art.

Generally, applicants have taken the Examiner's suggestion and have amended claim 1 to delete the functional recitation. However, applicants have not added the suggested element of a radially asymmetric coupling element. Rather, applicants have added a positive recitation of "at least one of (1) a gap in the transmission path between the transducer and an end face of the transmitter, and (2) a recess in the end face of the transmitter." Applicant wishes to note that claim 1 is no longer limited by any functional requirement of energy attenuation within relative portions, lowermost or otherwise, of the transmitter. It is requested that the claim be so construed in determining patentability.

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Neither Beck, nor any of the other prior art references teach or suggest the existence of (1) a gap in the transmission path between the transducer and an end face of the transmitter, or (2) a recess in the end face of the transmitter, as is required by amended claim 1. Even if the metal layers of the Beck device are considered to inherently affect the transmission of the energy from the transducer to the transmitter as the Examiner asserts, the metal layers are applied evenly to the entire surfaces of the sequential material to more effectively effectuate the transmission of the acoustical energy from the transducer to the transmitter. There are no gaps or recesses illustrated or suggested. Therefore, Beck does not teach or suggest the invention of claim 1. Accordingly, it is requested that the rejection of claim 1-2 and 4-6 be withdrawn.

With respect to claim 14, claim 14 has been amended to require that "an end face of the transmitter comprises a recess to attenuate the energy transmitted to a portion of the transmitter." The transmitter 14 of Beck does not contain such a recess, nor does Beck suggest adding such a recess. It is requested that the rejection of claim 14 over Beck be withdrawn.

Turning to the rejection of claim 20 over Beck, claim 20 requires, inter alia, that the "transducer be coupled to the transmitter in a manner to create a transmission path so that megasonic vibration from the transducer is transmitted to the transmitter and is transmitted through the meniscus to the substrate as normal-incident waves directly beneath the probe lower edge, and shallow-angle waves on either side of the normal-incident waves, said waves being adapted to loosen particles on the substrate, the transducer being coupled to the transmitter in a manner to reduce a ratio of the normal-incident waves to the shallow-angle waves so as to prevent damage of delicate devices on the substrate beneath said lower edge." While Beck has been cited as disclosing the recited element, this is not the case.

Even if applicants acknowledge and agree with the Examiner's statement that the metal layers of Beck will, to some extent, affect the transmission of the acoustical energy from the transducer 34 to the transmitter 14, it will not attenuate the energy in manner "to reduce a ratio of the normal-incident waves to the shallow-angle waves so as to prevent damage of delicate devices on the substrate beneath said lower edge," as is required by claim 20. At best, because the metal layers form a solid interface across the entire surfaces of the transmitter 14 and the transducer 34, the metal layers of Beck will evenly attenuate all of the energy being transmitted

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from the transducer 34 to the transmitter 14. There will be absolutely no differentiation in the attenuation of the normal-incident waves, which are produced at end 50, and the shallow-angle waves produced at the angled walls. Therefore, Beck does not teach "the transducer being coupled to the transmitter in a manner to reduce a ratio of the normal-incident waves to the shallow-angle waves so as to prevent damage of delicate devices on the substrate beneath said lower edge," as is required by claim 20. Accordingly, it is requested that the rejection be withdrawn and the claim found to be allowable over the prior art of record.

It is believed that all grounds of rejection and objection have been traversed or obviated, and that the rejections and objection should be withdrawn, and the application allowed

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